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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,448

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Michael Tobin

41PR-133546 (GEN-0350)

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EXAMINER

DONOVAN, LINCOLN D

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/708,448	Applicant(s) TOBIN ET AL. AK	
	Examiner Lincoln Donovan	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to because boxes 130, 150 and 120 should be labeled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 13 and 18, applicant should clarify what is intended by the electromagnetic trip unit being "in signal communication" with each of the plurality of conduction paths. It is not clear whether applicant intends the electromagnetic trip unit to be a mechanical process, see claims 5 and 7, or a "signal" to be relayed to an electromagnet. It is noted that the magnet structure of claim 5 is assumed to be armature 152 attracted to yoke 270 to trigger the operating mechanism (see applicant figure 5). In claim 1, lines 16-18, applicant should clarify the specific response intended by the "electronic trip unit being operably responsive to a second multi-cycle waveform of the short circuit current."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aihara et al. [US 6,480,082] in view of Castonguay et al. [US 4,884,048].

Regarding claims 1, 3-4, 6, 12, 18-19 and 21-22, Aihara et al. disclose a double break apparatus for interrupting an electrical short circuit current in an electrical distribution system [figures 1-2] comprising:

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- a housing [6];
- a plurality of separable conduction paths [figure 14];
- an operating system [3, figure 1] in operable communication with the plurality of conduction paths [figure 14, column 5, lines 49-67];
- an electronic trip unit [57] in signal communication with the plurality of conduction paths and in operable communication with the operating mechanism [column 9, lines 11-56];
- an electromagnetic trip unit [figure 3] in communication with the operating mechanism [column 8, lines 50-67].

Aihara et al. disclose everything claimed except the explicit showing of the electronic trip unit being in signal communication with each individual phase and the electromagnetic trip unit being responsive within the first half-cycle and the electronic trip unit being responsive to a second multi-cycle waveform of the short circuit current.

Castonguay et al. discloses a multiphase breaker [10] having a current transformer [37] for each of the phases.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the multi current transformer design of Castonguay et al. with Aihara et al., for the purpose of providing improved trip response.

It would have been obvious to one of ordinary skill in the art at the time the magnetic response time would have been virtually instantaneous, or within half a wave cycle, since the effect of the current on the arms provides the activating force and the

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electronic trip unit, in order to detect a fault would have to either sense a zero-crossing or a time lag, would have a delayed reaction to the fault.

Regarding claim 2, Aihara et al. disclose the electromagnetic trip unit including an electromagnetic actuator disposed at each of the plurality of phases [figure 4b].

Regarding claims 5 and 20, Aihara et al. disclose the electromagnetic trip unit comprising a magnetic yoke [51] and armature [52].

Regarding claim 7, Aihara et al. discloses the conduction paths comprising a blow open contact arm structure [column 5, lines 8-48].

Regarding claim 8, Aihara et al. disclose everything claimed except the specific operation response of the blow open contact arm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the magnetic response time would have been virtually instantaneous, or within half a wave cycle, since the effect of the current on the arms provides the activating force.

Regarding claim 9, Aihara et al. disclose the blow open contact arm being a rotary contact bridge [figure 1].

Regarding claim 10, Aihara et al. disclose a conduction path in each of three phases within the housing [figure 14-15].

Regarding claims 11 and 23, Aihara et al. disclose the electromagnetic trip unit having a trip bar [3] that is common to all of the phases and each phase having a separate armature disposed thereat [column 8, lines 50-67].

Regarding claims 13-17, the claimed method steps would have been necessitated by the product structure.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lincoln Donovan whose telephone number is 571-272-1988. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ldd


LINCOLN DONOVAN
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